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1. PURPOSE AND SCOPE

Describe the properties and characteristics of Whole milk powder, fortified or not with vitamins A and D and manufactured at the industrial plant Lácteos La Ramada S.A, located in Franck, Santa Fe Province, Argentina.

The minimum and maximum values of the contents of vitamins A and D established in this specification are in accordance with current legislation in Argentina, in order to reconcile the internal market demands with foreign specifications.

2. DEFINITIONS

LEP 26%: Whole milk powder with a minimum fat content of 26%.


LEP 28%: Whole milk powder with a minimum fat content of 28%.

LEP 26% with Vit A and D: Whole milk powder with a minimum fat content of 26%; fortified with the addition of a premix of vitamins A and D on fluid milk, according to the dose requested by the client.

LEP 28% with Vit A and D: whole milk powder with a minimum fat content of 28%; fortified with the addition of a premix of vitamins A and D on fluid milk, according to the dose requested by the client.

3. RESPONSIBILITIES

Responsible Person	Actions
Head of Quality Management	<ul style="list-style-type: none"> Keep this document up to date and verify the information included Inform the person responsible for Logistics and Foreign Trade of any modifications to this document. Distribute this document to customers.
Head of Production and responsible for planification	<ul style="list-style-type: none"> Review this document and verify the information included Participate in the evaluation of the specification Load the information inherent in MES recipes
Person responsible for Logistics and Foreign Trade	<ul style="list-style-type: none"> Distribute this document to customers. Inform customers of any modification to this document

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4. DEVELOPMENT

4.1 Description

It is the product obtained by dehydrating milk standardized in fat and protein matter through technologically appropriate processes with the addition or not of a premix of Vitamins A and D on fluid milk.

If requested by the customer, the product can be made with Kosher or Halal religious certification.

4.2 Organoleptic characteristics

Uniform powder, free from lumps, yellowish white color, with a characteristic aroma and flavor, typical of fluid milk, non-acid, non-spicy, not to tallow or strange fats.

4.3 Composition

Fluid milk selected according to CAA chapter VII GMC Resolution No. 080/94 and articles 567-567bis- and 570; water-soluble premix of vitamins A and D (for fortified milk), mix of tocopherols as allowed antioxidant.

4.4 How to use

This product is aimed for general consumers. Not suitable for people with lactose intolerance, allergic to any of its ingredients, or infants less than 6 months old.

To prepare a 200 ml glass of fluid milk, add 2 heaped tablespoons to 200 ml of previously boiled and cooled drinking water. Stir until dissolved


For one liter add 10 heaped tablespoons to 500 ml of previously boiled and cooled drinking water. Stir until dissolved. Add more water to make up to 1 L.

Use dry and clean utensils for handling

To use as a powdered ingredient or reconstituted in other proportions, the instructions of the process where it is used must be followed.

4.5 Physical contaminants


During the manufacturing process, a set of preventive measures is established to ensure that the final product is free of foreign particles. Metal and foreign particles detectors are present in the packaging lines, whose detection limits are expressed below:

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Line	Type of particle	Characteristic	Detection limit
25 kg Bag	Metallic	Non-Ferrous	4.5 mm
		Ferrous	3.0 mm
		Stainless Steel	3.5 mm
Big-Bags	Metallic	Non-Ferrous	2.0 mm
		Ferrous	1.0 mm
		Stainless Steel	2.8 mm
Multi-laminated film	Foreign material	Glass	2.381 mm
		Ceramic	3.175 mm
		Stainless Steel	1 mm

4.6 Technical characteristics

Physicochemical characteristics		
Parameter	Value	Analytical method
Moisture	Max. 4,00% w/w	FIL 26: 1982
Fat content in LEP 26 %	Mín. 26,0 % w/w	FIL 9 C:1987
Fat content in LEP 28 %	Mín. 28,0 % w/w	FIL 9 C:1987
Total Proteins	Mín. 24,0 % w/w	FIL 20 B: 1993
Proteins in non-fat solids	Min. 34,0 % w/w	Calculated
Ashes	Max 6.5%	FIL 89: 1979
Titrateable acidity	Max 18,00 ml of NaOH 0.1 N/10g of NFS	FIL IDF 86: 1981
pH Dilution 1:10	6,6 – 6,8	Potentiometry
Insolubility Index	Max 0,5 ml	FIL IDF 129 A: 1988
Scorched particles	Max. Disc "B"	ADMI 916
Apparent density	0,45 to 0,65 g/ml at 1250 hits)	GEA-Niro Method Analytical Method A2b
Vitamin A µg/100 g min	1600 IU - 480 µg retinol (20 % IDR according to CAA)	HPLC-FLD / ISO 12080-2:2009; IDF 142-2:2009
Vitamin A µg/100 g max	4000 IU - 1200 µg retinol (40 % IDR according to CAA)	HPLC-FLD o ISO 12080-2:2009; IDF 142-2:2009
Vitamin D µg/100 g min	320 IU - 8 µg calciferol (20 % IDR according to CAA)	LC-MS/MS or HPLC FIL Standard 177:2002ISO 14892.


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Vitamin D µg/100 g max	480 IU - 16 µg calcipherol (40 % IDR according to CAA)	LC-MS/MS or HPLC FIL Standard 177:2002ISO 14892.
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Microbiological characteristics		
Parameter	Value	Analytical method
Aerobic mesophilic count cfu/g	< 5.000	FIL 100 B: 1981
Enterobacteriaceae MPN/g	m<3	ISO 21528-1: 2004.
Coliforms at 30°C MPN/g	m<3	ISO 4831:2006
Coliforms at 45°C MPN/ g (*)	m<3	APHA 1992 (Chap. 24)
Escherichia coli MPN/ g (*)	m<3	ISO 16649-3: 2015
Staphylococcus aureus Coagulase Positive / g	M<10	AOAC 2003.11
Salmonella spp / 300 g	Absent	I ISO 6579:2002 (surpassed by ISO 6579-1: 2017)
Flat-sour thermophilic spores cfu/g	< 1000	COVENIN 2948-92
Molds and Yeasts (*) cfu/g	< 50	ISO 6611 IDF 94
Listeria monocytogenes / 125g(*)	Absent	ISO 11290-1:1996/Adm. 1:2004
Bacillus cereus (*) cfu/g	< 50	ISO 7932:2004
Cronobacter sakazakii / 300 g (*)	Absent	ISO/TS 22964:2006 (IDF/RM 210:2006)
Clostridium Sulphite Reducers at 37°C cfu/ g (*)	< 10	ISO 15213:2003
Clostridium Sulphite Reducers at 46 °C (C. perfringens) cfu/ g (*)	< 1	ISO 7937:2004
Thermonuclease produced by Staphylococcus Coagulase Positive / 25 g	Absent	ISO 8870:2006 (IDF 83:2006)

(*) Analysis performed by weekly monitoring or at the request of the client.

Chemical contaminants		
Parameter	Value	Analytical method
Inhibitors and antibiotics (*)	Non-detectable	AOAC 988.08
Gliadins (**)	< 5 mg/kg	RIDASCREEN Gliadin R7001 Sandwich-Enzyme Immunoassay (Biopharm)


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Soy Allergen Test	Non-detectable (< 2.5 ppm)	ELISA
Chloramphenicol	< 0.3 ug/kg	LC-MS/MS
Aflatoxins	< 0.5 mg/kg	ISO 14501:2007
Nitrates	< 50 mg/kg	ISO 14673-3
Nitrites	< 2.0 mg/kg	ISO 14673-3
Radioactivity	Am-241+Pu-239 ≤ 1 Bq/kg Sr-90+I-131 ≤ 100 Bq/kg Cs-134+Cs-137 ≤ 100 Bq/kg	CNEA
Arsenic	< 0.5 mg/kg	AOAC 2013.06
Cadmium	< 0.2 mg/kg	AOAC 2013.06
Chromium	< 1.0 mg/kg	ICP-MS
Mercury	< 0.01 mg/kg	AOAC 2013.06
Lead	< 1.0 mg/kg	AOAC 2013.06
Zinc	< 50.0 ug/kg	ICP-MS
Copper	< 1.5 ug/kg	ICP-MS
Iron	< 3.0 ug/kg	ICP-MS
Benzopyrenes	< 3.0 ug/kg	LC-MS/MS
Organochlorines Pesticides	< 10 ug/kg	CG-MS (MS)
Organophosphorus Pesticides	< 10 ug/kg	CG-MS (MS)

Analysis performed by annual monitoring or at the request of the client, except (*) which is carried out for all batches and (**) that is analyzed in the Assal laboratory for product registrations or re-registrations.

4.7 Nutritional information

Average nutritional information	Per 100 g	Amount per serving (*)	%DV
Energy	499 kcal = 2086 kJ	125 kcal = 522 kJ	6%
Carbohydrates	Min. 36 g / Max. 40 g	Min. 9 g / Max. 10 g	3%
Total sugars	Min. 36 g / Max. 40 g	Min. 9 g / Max. 10 g	3%
Added sugars	0 g	0 g	0 %
Proteins	Min. 24 g / Max. 26.5 g	Min. 6 g / Max. 7 g	8% / 9%
Total fat	Min. 26 g / Max. 29.5 g	min. 6,5 g / Max. 7.5 g	12% / 13%
Saturated fat	18 g	4,5 g	20%

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Unsaturated fats	8 g	2,0 g	-
Trans unsaturated fats	0,5 g	0,13 g	-
Cholesterol	50 mg	13 mg	-
Dietary fiber	0 g	0 g	0 %
Sodium	400 mg	100 mg	5 %
Calcium	1000 mg	250 mg	25 %
Potassium	1200 mg	400 mg	12 %
Vitamin A (*)	480 µg or 1600 IU min	120 µg or 400 IU min	20% min
Vitamin D (*)	8 µg or 320 IU min	2 µg or 80 IU min	20% min

Serving Size: 2 tablespoons (25 grams).

(*) It must be expressed according to the dose requested by the client.

4.8 Information on allergens and sensitizing substances

	Present in the Product	Present in the same production line	Present in the establishment	Do you guarantee the absence of this allergen or substance in the product supplied?	
				YES	NO
Cereals containing gluten (1)	NO	NO	NO	YES	
Crustaceans and derived products / Molluscs and derived products / Fish and fishing products	NO	NO	NO	YES	
Ingredients of animal origin and/or derivatives.	NO	NO	NO	YES	
Eggs and egg products	NO	NO	NO	YES	
Peanut and derived products	NO	NO	NO	YES	
Soy and derived products (except soy lecithin)	NO	NO	NO	YES	
Soy lecithin	NO	YES	YES	YES	
Milk and milk products (including lactose)	YES	YES	YES		NO
Sulfur dioxide and sulfites (2)	NO	NO	NO	YES	
Dried fruits and derived products (3)	NO	NO	NO	YES	
Celery and derived products	NO	NO	NO	YES	
Sesame, cotton, poppy, sesame, sunflower seeds and derived products.	NO	NO	NO	YES	
Mustard and derived products	NO	NO	NO	YES	
Fungus	NO	NO	NO	YES	
Fruits (apple, banana, grapefruit, kiwi, orange, peach)	NO	NO	NO	YES	

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CanelaCinnamon	NO	NO	NO	YES	
Non-nutritive sweeteners	NO	NO	NO	YES	
Ethyl alcohol	NO	NO	YES	YES	
Lupins (lupines) and products based on lupins	NO	NO	NO	YES	
Corn and its derived products	NO	NO	YES	YES	
Monosodium glutamate	NO	NO	NO	YES	
Cocoa	NO	NO	NO	YES	
Latex	NO	NO	NO	YES	
Dyes: INS 102 Tartrazine / INS 104 Quinoline Yellow / INS 110 Sunset Yellow FCF / INS 122 Azorubine / INS 124 Ponceau 4R / INS 129 Allura Red AC	NO	NO	NO	YES	
Coconut and derivatives	NO	NO	NO	YES	

(1) Cereals containing gluten; for example, wheat, rye, barley, oats, spelt or their hybrid strains, and products thereof, in a concentration of 10 mg/kg or higher.

(2) Sulfites added at concentrations of 10 mg/kg or higher expressed as SO₂ (does not include naturally occurring sulfites).

(3) Nuts: almonds, hazelnuts, walnuts, pecans, cashews, chestnuts, pistachios and derived products.

4.9 Storage conditions

Store in its original container, in a cool (<25°C), dry (<70% RH) and dark place


4.10 Shelf life

- **Big Bag:** 6 months.
- **25 kg Bags without modified atmosphere:** 12 months.
- **25 kg Bags with modified atmosphere:** 18 months.
- **Multi-laminated film without modified atmosphere:** 12 months.
- **Multi-laminated film with modified atmosphere:** 18 months.

4.11 Packaging

- **BIG BAG:** *Inside:* Three-layer low density virgin polyethylene liner, non-translucent black color; suitable for human consumption. *Exterior:* 100% virgin polypropylene raffia with anti-UV additives.
- **25 kg Bags:** primary packaging made up of 70-micron +/- 10% multi-layer coextruded polyethylene bags with EVOH barrier, on the inner side; and covered by multi-layer Kraft paper bags of at least two sheets, printed or labeled with square bottom and straight cut closure.

"Una vez descargado o impreso este documento se considera copia no controlada, por tanto LÁCTEOS LA RAMADA SA no se hace responsable de su actualización"

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- Multi-laminated film (pouch): bi-laminated bag of metalized polyester and polyethylene as primary packaging, packed in cardboard cases as secondary packaging. Presentation by 500, 800 and 1000 g.


4.12 Presentation

Big Bag palletized on Arlog C Treated Wooden Pallet	
Units per pallet	1
Pallet height	Variable according to weight
Number of levels	1
Net weight of full pallet	Between 500 and 1200 kg

25 kg Bags	Arlog C treated wooden pallet	Big-sized (220 x 100 cm) treated wooden pallet
Units per pallet	40	56
Pallet height	200 cm	125 cm
Number of levels	10 max	7 max
Net weight of full pallet	1000 kg	1400 kg

<p>Primary packaging: bi-laminated bag of metallized polyester and polyethylene unprinted.</p> <p>Secondary packaging: cardboard case printed with brand art.</p> <p>Tertiary packaging: corrugated cardboard boxes printed with brand art.</p> <p>Palletized: Arlog C treated wooden pallet.</p>			
Net weight	500 g	800 g	1000 g
Units per pallet	1152	640	640
Pallet height	195 cm	195 cm	200 cm
Number of levels	8	8	8
Number of boxes	48	72	64
Number of units per box	24	10	10
Net weight of full pallet	576 kg	512 kg	640 kg

The palletizing formats are declared according to programs available in the palletizing robot. These formats can be adapted to the extent requested by the client manually or automatically.


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4.13 Legal references

- Argentine Food Code Chapter I. General Dispositions, articles 1 and 2
- Argentine Food Code Chapter IV Utensils, Containers, Packages, Apparatus and Accessories, articles from 184 to 219
- Argentine Food Code Chapter V Rules for the Labeling and Advertising of Foods articles 220 to 246
- Argentine Food Code Chapter VIII Dairy Products articles from 553 to 556 inclusive.
- Argentine Food Code Chapter VIII Dairy foods. GMC Resolution No. 080/94 Mercosur Technical Regulation on the Identity and Quality of Bulk Fluid Milk for Industrial Use
- Argentine Food Code Chapter VIII Dairy Products articles 567-567 bis- and 570.
- Argentine Food Code Cap. VIII Dairy Foods. GMC Resolution No. 07/18 Mercosur Technical Regulation for the Identity and Quality of Milk Powder.
- Argentine Food Code Chapter XVII Dietary or Dietetic Foods articles from 1339 to 1346 inclusive.
- Argentine Food Code Chapter XVII Dietary or Dietetic Foods articles 1350-1351-1363-1364-1368-1369-1383-1383bis-1387.
- Argentine Food Code Chapter XVIII Food Additives articles from 1391 to 1396 inclusive, including Resolution GMC N° 105/94
- Argentine Food Code Chapter XVIII Food Additives article 1397
- Argentine Food Code Chapter XX Official Analytical Methodology articles from 1413 to 1414.
- Argentine Food Code Chapter XXI Procedures: articles 1415 and 1416.
- Law No. 27.462 "Promotion of Healthy Eating".

5. INTERNAL DOCUMENTS AND ASSOCIATED RECORDS


- MSDS.001 Safety Data Sheet: Milk Powder
- Customer specifications approved by Lácteos La Ramada SA

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- List of RNPAs managed by Lácteos La Ramada SA (located at: \\192.168.3.12\politica de gestión integrada\RNPA)

6. REVISION HISTORY

Reviewer	Date	Revision number	Reasons
Ma.Laura Pacheco	23/12/2013	00	New document
Ma.Laura Pacheco	19/05/2014	01	Correction points 4.6 and 4.7
Ma.Laura Pacheco	30/09/2015	02	Adequacy of language and inclusion of product presentation.
Ma.Laura Pacheco	21/09/2016	03	Unification of specifications. Recoding Inclusion of allergen table
Augusto Labath	20/01/2017	04	General Review Modification point 4.3
Ma.Laura Pacheco	08/05/2017	05	General Review Modification of points 1-2-4 Inclusion of Legal References.
Ma.Laura Pacheco	19/06/2017	06	Modification of specification limits for radioactive contaminants. Incorporation of Annex I
Ma.Laura Pacheco	15/11/2017	07	Modification of point 4.2 and addition of point 4.5: physical contaminants
Augusto Labath	21/10/2018	08	Modification of point 4.12 and addition of religious certifications to point 4.1
Augusto Labath	28/10/2019	09	Adequacy of attachments to the document. Correction WPN index in annex I Incorporation of analysis frequency for chemical contaminants and microbiology outside of CAA
Augusto Labath	21/05/2020	10	Protein contents update Modification of Analysis frequency for gliadins Change in palletizing
Augusto Labath	06/10/2020	11	Update according to new version of RTM
Augusto Labath	20/12/2022	12	Changes in items: 3. Responsibilities 4.6 Technical characteristics 4.7 Nutritional Information 4.8 Declaration of Allergens 4.11 25 kg bags presentation 4.13 Legal References
Augusto Labath	26/06/2023	13	Non-ferrous detection limit modification Update of point 4.7 Nutritional

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		Update of point 4.8 Information on allergens and sensitizing substances Updates in points 4.6; 4.10 and 4.12

Annex 1: Technical Characteristics of Whole Milk Powder for use in recombination for the production of UHT milk.

Physicochemical characteristics		
Parameter	Value	Analytical method
WPN index	2.0 – 3.0	ADPI 916
Lactates / 100 grams of NFS	≤ 100 mg	ISO 8069:2005 / IDF 69:2005
Alcohol test at 70° GL	Stable	Methodology proposed by Huppertz (2 ml of dilution 1:10)
Thermostability test or thermal coagulation time (TCT)	> 12 minutes	Davis&White Test (dilution 1:10, 140°C)
Ramsdell test	1.8 ml of potassium dihydrogen phosphate 68%	Tetra Pack Method (1:10 dilution, 100°C)

(*) Analysis carried out at the request of the client